**Progress Report on Funded Nursery Projects**
**Washington State Department of Agriculture**

**Date:** December 10, 2004

**Project Title:** Feathering of Fruit Trees in the Nursery with Cyclanilide

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**Progress: To be submitted for all projects funded in FY04 (July 1, 2004, to June 30, 2005): and FY06 (July 1, 2005, to June 30, 2006).**

In 2003, we discovered that branch development does not occur in the same way on apples and sweet cherries treated with cyclanilide: branching on treated apple trees appears to start from below where the shoot tip is located at the time of treatment. In sweet cherries, branching appears to originate from above the height of the shoot tip at treatment, suggesting that only the smallest, newest bud primordia deep in the shoot tip are affected by the cyclanilide treatment; after the elongation zone completes its growth, the new branches are higher than the tree was at the time of treatment. These observations need to be confirmed with additional studies to assess whether lateral branching develops in a predictable way when cyclanilide is applied.

Because timing of cyclanilide treatments determines when and where branches will develop and since the location of branching, as well as the number, length and crotch angles, is critical for commercial quality, development of a reliable timing criterion is of the utmost importance if this product is to be effectively employed in the nursery industry.

In 2004, we carried out subjective evaluations of branching treatments with Mr. Peter Van Well, CEO of Van Well Nursery and a person with a good understanding of feathered tree quality criteria. His observations suggested that an initial double application of cyclanilide on sweet cherry produced a better, more desirable tree structure than a single spray alone. Based on this observation, we plan to follow up on this idea in much more detail so that we are positioned to be able to make the best recommendations for use of cyclanilide should it be registered, which appears increasingly likely.

In 2004 we also conducted trials in which we collected detailed growth measurements prior to and after cyclanilide and cytokinin/gibberellin spray treatments to assess how these branching products might be affecting terminal growth. This question becomes of greater importance in the circumstance where double applications of cyclanilide are being contemplated, since efficacy of cyclanilide is so dependent on having the highest vigor and rate of shoot growth when the treatment is applied. These results will also become available soon.

In a new project proposal, we suggest a course of research projects that follow logically from what we have found in the last few years. The planned program of research focuses on the critical information elements we need to develop in order to most effectively use cyclanilide for production of nursery fruit trees best suited for the various markets these nurseries serve.